

Briefing for DCI Strategic Intelligence Panel,
1 October 1968

We have a very broad topic to cover, but I'll attempt to sketch in broad outline some of the more important aspects of the Soviet economy, and in particular the way in which the allocation of resources to military and space programs appears to fit into the total picture.

--First of all I'll review some US and Soviet economic indicators to give a feel for differences and some perspective, and I'll comment on Soviet allocation patterns;

--Then I want to say a few words about the way we measure the resources going to Soviet military and space programs--it is important that you understand where the numbers come from and how they are arrived at;

--Next I'll briefly review the pattern of military and space expenditures so that you have a feel for overall magnitude and proportions.

--Finally I'll comment on our current assessment of trends in Soviet defense spending in relation to their announcement of a large budget increase, and comment on the general economic outlook in relation to these.

A. General Data on the Soviet Economy:

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1. This first vu-graph shows some comparative data on the US and Soviet economies, which illustrates some of the similarities and differences.

2. In 1967 Soviet gross national product--measured in US terms--was equivalent to some 360 billion dollars. While this is less than half of the US, Soviet GNP still is the second largest in the world, and has been geared traditionally to the ends of economic growth and a strong military posture.

3. The Soviets annual rate of growth averaged 6 to 7 percent in the 1950's and, while there are signs of its slowing down, the growth rate has averaged a respectable 5 percent over the last five years.

4. The Soviet method of achieving high rates of growth has been quite simple: a large proportion of available resources have regularly been devoted to investment in heavy industry. As a result, industrial production and the economy have experienced rapid expansion. The pattern of allocation, however, has slighted the consumer industries and

agriculture, and as a result economic progress has generally been at the risk of agricultural shortages and until very recently, at the expense of the consumer.

5. The overall level of Soviet industrial production has grown to a point where it is now about one-half of the US level. At the same time, the standard of living for the average Soviet citizen is still less than one-third that of his US counterpart. These contrasting levels--about one-half of US industrial product and 30 percent of the US standard of living--stem from the emphasis on investment in heavy industry. This investment has paid off to some degree in the Soviet attempt to "catch up" with US production. As you see, their primary energy production is now about 60 percent of ours, and Soviet steel production is almost 90 percent of US output.

6. In consumer areas such as automobile production or use, the Soviet Union is of course decades behind the US, and in 1967 only 26 percent of all Soviet families owned washing machines, 58 percent owned radios and 13 percent owned refrigerators. All of these are in sharp contrast to the equivalent US indices.

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7. The Soviet emphasis on heavy industrial investment has also had its effect on the agricultural sector of the economy. This is regularly a volatile element in the economy, partly because weather and land tend to be unfavorable compared to needs, but also because of the disincentives of the collective farm policies and the short-sighted attitude taken over the years toward agricultural investment.

8. These trends resulted, for example, in the well known agricultural problems of the 1963-65 period when the Soviets had to import more than $1\frac{1}{2}$ billion dollars worth of grain from non-Communist countries.

9. Soviet agriculture on the whole is still labor intensive compared with US agriculture, and as a result, a Soviet farm worker supplies only six persons from his efforts, whereas a US farm worker supplies 41 persons.

10. In general, the Soviet agricultural situation is such that it cannot long escape the concern for any Soviet leadership and it has from time to time been the dominant problem of the economy.

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B. Soviet Resource Policies

11. As I indicated the traditional economic policy followed by the Soviet leaders has been to favor economic growth and national defense at the expense of the consumer. In any squeeze on resources the Soviets could be counted on to default on consumer-oriented programs in order to meet goals set for investment in heavy industry and defense.

12. The results of this policy, in terms of Soviet military posture, have been impressive, as the record of Soviet military and Space programs shows. Considerable success has also been achieved in the area of economic growth. By allocating increasingly larger amounts of national resources to investment in new plant and equipment the Soviets were able to record a rate of growth in GNP in the 1950's substantially higher than all of the principal industrialized nations except West Germany and Japan. In the 1960's, the rate of growth of GNP fell to a less spectacular yet still highly respectable 5 percent, because of a persistent decline in the return on investment and because of rising military expenditures.

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13. The past three years have witnessed two significant changes in the pattern of Soviet resource allocation. The more obvious of these is the rapid strategic buildup of the past 3 years. Following a period of relative stability, military expenditures rose sharply in 1966 and 1967, and are probably still rising in 1968, though perhaps less rapidly.

14. Another noteworthy trend in this 1965-68 period is that there has been a reversal of the traditional ordering of priorities among the civilian sectors. Since 1965, rates of growth in consumer-oriented investment more than doubled compared with the previous five years. Rates of growth in producer-oriented investment, in the meantime, fell to a level below even that experienced in the early 1960's. It appears that--for the moment, anyway--consumer welfare has replaced economic growth as the favored claimant on new Soviet resources.

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CIA Methods of Costing the Soviet Military Effort

15. There is much information--generally unclassified--on many aspects of the overall Soviet economy and its performance. The major area where we have to build up our economic data piece by piece is in the military and space field. Before turning to Soviet military and space expenditures in detail, let me describe how we handle the problem in general.

a. For many years, using all sources of information, we have recorded and catalogued the major elements that make up Soviet military forces--divisions, aircraft, ICBMs, ships and so on. We also establish the quantities of men, other equipment and material associated with each of these elements. As you know, the information available to intelligence today makes it possible to build and maintain detailed accounts in these terms.

b. This detailed information is kept in the memory of a large computer for the past, the present and as projected for the future--covering almost three decades in all.

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c. Regularly, as newer information becomes available the information in the computer is updated and refined.

d. Each time, by computer, we apply ruble prices as well as dollar prices to all of the quantities, calculating the various program costs, adding up the results, and arriving finally at figures for total defense spending in both rubles and dollars.

e. We are able with the computer also to assess and summarize costs according to categories such as procurement, personnel, operations and maintenance and the like.

f. The most difficult areas to measure by these means are R&D and Space, where much of the activity is essentially invisible.

16. Separate ruble and dollar calculations are necessary because of the unrealistic Soviet official exchange rate and because of differences in relative costs between the US and Soviet economies.

17. The ruble figures show how the costs of these military programs or missions look, and compare with each other, in Soviet terms. They provide a Soviet view of defense spending as a

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whole and how it eats into spending for industrial or agricultural investment or consumer welfare, and we use the ruble data in our analyses of overall economic performance.

18. The equivalent dollar figures provide and understanding of the size of Soviet defense programs and activities in terms that are familiar to US policy makers and planners and allow direct comparisons with US programs. The work is very detailed--as any budget analysis is--and is being continually updated and refined. The methods used are comparable to those used in industry and the Department of Defense to perform similar work for the US.

19. As I indicated earlier, we need to do these calculations comprehensively and in this detail because the Soviets provide only a single figure each year for their military spending and we know from our analyses that not everything is included in the announced budget figure.

a. While we cannot always be sure that the ruble prices we use are exactly the same as the Soviet prices for a given piece of equipment, we are quite confident that our

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work shows the general size as well as the proportions and interrelationships within the Soviet military and space budget.

b. On the dollar side, we are also confident that the expenditures represent appropriate magnitudes as the DOD comptroller or Secretary of Defense would view them if attempting to pay for the Soviet programs in this country.

Soviet Expenditures in Relation to Announced Budget

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20. This vu-graph shows our estimates of the ruble trend of total Soviet military and space expenditures from 1950 to 1970 and the corresponding announced Soviet defense budget.

21. The vu-graph also shows the historical change which has occurred in percentage distribution by category of expenditures as derived from our computer analysis. The comparison reveals the type of movement expected in a period of shifts from manpower-oriented military forces to technologically-oriented forces, and the impact of R&D and space activities.

22. RDTE&S increased from a level of less than 5 percent of the total in 1950 to 27 percent of total expenditures in 1967. While these ruble figures and ruble-based percentages reflect relationships as we think the Soviets see them, the figures convey little to an American about the size of the Soviet effort they reflect.

Comparison of US and Soviet Expenditures for 1967

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23. The next vu-graph shows US and Soviet defense and space expenditures in comparable terms--dollars--by mission for 1967, and is intended to provide--in a familiar context--an appreciation of the overall size of the Soviet defense effort and general way in which expenditures are divided among programs. This comparison also shows major structural differences in the military programs of the two countries. Over the past five years, the Soviet defense and space effort, in dollar terms, has averaged about 85 percent of what we have been spending, excluding unique Vietnam expenditures.

a. Soviet strategic attack expenditures were 40 percent larger than those of the US in 1967. On the US side while the year was somewhat transitional, the entire expenditures

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were devoted to balanced intercontinental capabilities. About 40% for ICBM's, 25% for Polaris submarines and 35% for the bomber force. On the Soviet side, while the total was greater, about 25% went to peripheral attack capabilities--medium bombers and for the IRBM/MRBM forces. The remaining 75% was for intercontinental attack of which most was for ICBM forces.

b. There are considerable differences in expenditures for strategic defense. In the US only about 3% of total expenditures were allocated directly to strategic defense and about two thirds of this was for command and early warning radar. The remainder was for fighter aircraft and surface to air missiles. On the Soviet side about a fourth of the total--an amount equal the total for the US--was allocated to command, control and early warning radar. Another 25% of the Soviet amount was devoted to fighter aircraft forces. The remainder--about half of the total--was allocated to surface to air missile forces and to the ABM and anti-satellite program.

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Twelve to 15% of total Soviet defense expenditures regularly have been devoted to the strategic defense mission.

c. The very large 1967 differences in general purpose forces and for command and general support are results of cost attributable to Vietnam. Historically Soviet expenditures for these missions have averaged about 70-80 percent of the US in terms of size. Bear in mind that the Soviets do not have the surface naval forces or world-wide lift capabilities of the US.

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d. As we measure the Soviet allocation to R&D and Space for 1967, it very nearly equals the US effort in overall size. In all of our charts R&D expenditures are broken out of the missions and carried separately. This adjustment was also made for the US figures.

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Soviet Expenditures by Major Mission

24. This next vu-graph shows the trends--expressed in rubles--of Soviet military and space expenditures through time. We will be looking at

the strategic attack, strategic defense, and the research, development and space expenditures in more detail shortly. At this point note mainly the trends and the proportions between missions.

25. In the early 1950's the ground forces component of the general purpose forces dominated Soviet defense spending. The subsequent decline was largely a result of moving from a high of some 6 million men under arms in 1952 to a low of less than 3 million in 1961. A good deal of this decline from the middle 1950's to the early 1960's was the Khrushchev influence of bringing the Soviet military establishment from a primary conventional establishment to one which involved systems based on nuclear and rocket technology. The new programs, in turn, were brought largely at the expense of conventional programs.

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26. The principal new programs in the 60's of course, have been space, and large scale R&D.

Strategic Attack Expenditures by Element

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27. Let us look now at the composition of expenditures for strategic attack forces by element from 1955 and as they are currently projected to 1975.

28. Let me say a word about the 1970 to 1975 projections. They reflect cost estimates of programs explicitly projected in a coordinated intelligence community document, the National Intelligence Projections for Planning, called the NIPP for short. The NIPP series is an intelligence community evaluation in detail of both the high and low ranges of potential Soviet military systems or programs. The projections are made to assist DoD planning. CIA performs the costing on the NIPP series.

29. Turning to this graphic, note that strategic attack expenditures prior to 1962 were almost totally for systems to attack in peripheral areas. The TU-16 medium bomber program--which accounts largely for the high 1955 expenditures--still represents the largest single weapons systems program in Soviet history, in cost terms. In the late 1950s and earliest 1960's the MRBM/IRBM programs--again aimed at the periphery--dominated Soviet spending for strategic attack. This pattern was not drastically changed until the large scale ICBM programs began in the 1962-64 period. The two distinct periods of ICBM growth represent the SS-7 program first, and the SS-9 and SS-11 programs next.

30. Ballistic missile submarines have not represented a large portion of the total spending for strategic attack. The G&H classes, of which a few of each were constructed, never constituted a large force. It is just recently that the Soviets have begun to develop a sea based intercontinental missile force. With the new Y class submarine which has an intercontinental capability. The expenditures shown here after 1967 reflect the Y class program.

31. The projection beyond 1967 implies the continuation of heavy and medium bombers but in gradually diminishing numbers; an increasing ballistic missile submarine force; and an augmented MRBM/IRBM force in which the mix would change from a predominantly fixed site MRBM/IRBM force to one employing newer, potentially mobile missiles.

32. The ICBM projections, in particular, reflect uncertainties as to future Soviet programs beyond those now identified.

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Strategic Defense Expenditures by Element

33. Let us turn to the pattern of expenditures for strategic defense. Historically, expenditures

for strategic offense and defense have averaged out as relatively equal--each about 12 to 15% of total defense expenditures.

34. Since the early 1950s, the Soviets have maintained a large fighter aircraft force for air defense, and new aircraft have been developed and are being deployed to this role.

35. The magnitude of aircraft deployment is matched also in the radars and control and early warning network. There are at present some 1000-1200 radar sites throughout the USSR having a total of some 3800-5300 radars, and so long as the US maintains active bomber aircraft forces around the periphery, high Soviet expenditures for radar, control and warning systems will be required.

36. In the early 50's the AAA forces constituted a large segment of the strategic defense element, but in the middle fifties began to be supplanted by the SA-1 defense at Moscow, which was followed by the SA-2 program which now has approximately 5400 launchers deployed throughout the USSR. There are also about one thousand SA-3 launchers which have low altitude capability.

37. The extensive current deployment program of the SA-5 Tallinn system, is included in the surface to air missile category.

38. Our estimates of the dollar equivalent of the ABM defenses which are visible in the Moscow area, are on the order of 1 to $1\frac{1}{2}$ billion dollars. This takes into account estimated costs of Hen House radars, the Dog House Radar, and the sets of triad and launcher combinations being built and deployed.

39. The NIPP projects two alternative ABM defenses. A general defense of the USSR and defense against a third power threat. The NIPP projections, however, do not explicitly define the characteristics of the system involved, or explicitly lay out an expected deployment, geographically. Thus, the range of projected ABM costs represents only an order of magnitude, and are not based on the detail shown for other systems. The program acceleration implied by the high side of these ranges appears clearly too sharp to be feasible.

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Expenditure for Research, Development, and Space

40. We feel confident that the trends through 1967 for RDTE&S shown on this vu-graph reflect the actual direction of these Soviet expenditures. Analysis of Soviet budgetary data for allocation to science yields a generalized measure in rubles for Soviet military R and D and Space and is consistent in trend with other data. We convert the ruble estimates to dollars on the basis of a weighted ruble/dollar ratio.

41. In addition to the aggregate measures in rubles and dollars we attempt to reconstruct in detail the Soviet R and D and Space costs by the same methods we use to analyze other defense programs. Because a substantial portion of such activity is hidden, however, it is impossible to measure it directly in the detail of other programs.

42. By 1965, total Soviet space program activity had reached a size and dimension roughly equal to that of the strategic attack mission or the strategic defense mission, measured in cost terms.

43. The large amount of military R&D that cannot be directly observed or readily associated with particular systems makes this area particularly

difficult to delineate with confidence or precision. The shaded "measurable area" represents the portion which we account for on the basis of systems or activities which are identifiable.

44. Between 1950 and 1967 the average annual rate of growth for military RDT&E and space was nearly 15% or more than double the rate of growth for the economy as a whole.

45. Although the rate of growth has slowed somewhat in recent years, there is no concrete indication that these expenditures have reached a limit, and they could continue to increase over the next several years at an annual rate between 5 and 10 percent.

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Military Expenditures and Resource Allocation: 1968

46. In October last year the Soviets announced that the military budget for 1968 was to be 15 percent higher than 1967. We have assessed this data very carefully, and at the present time have been unable to find increases in program activities which would imply an increase in total expenditures of this magnitude. There is a possibility that the increase may be illusory in part, because of such phenomena as price changes or wage increases.

47. The performance of the economy during the early part of this year does seem consistent with some increase in military spending. Production of civilian goods grew less rapidly than heavy industrial production. Production of civilian investment goods of the kinds which are likely to be displaced by military production have shown declines compared with the first quarter of last year. Turbines, generators, machine tools, and some other kinds of equipment have shown absolute declines.

48. When one lays out the evidence as to the detailed nature of the military and space programs, imputes costs to these programs and examines the results, the current evidence indicates an increase for 1968 on the order of 3 to 5 percent. On the whole this represents the continuation of programs which contributed to the increase in 1966 and 1967 but not an acceleration. Major new programs thought to be in the offing are coming along in 1968 at rates more suggestive of continued growth than of acceleration. Acceleration, however, may characterize a number of smaller and less visible programs for which evidence is more difficult to identify early. Efforts to achieve generally increased readiness, higher

rates of operation and training and some increases in the military manpower resulting from the call up of two classes of conscripts are examples.

Defense and Space Expenditures in Relation to Overall Economic Outlook

49. The magnitude of Soviet defense and space expenditure is, as previously indicated, about 85 percent of US expenditures when measured in dollar equivalent terms.

50. The defense effort in the Soviet Union, however, takes a larger share of important economic resources such as durables, that is machinery and equipment. In the Soviet Union, almost one-fourth of the output of durable goods goes to defense. This compares with about one-sixth for the US.